



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R9–ES–2011–0075]; [4500030115]

RIN 1018–AY28

Endangered and Threatened Wildlife and Plants; Listing the Yellow-billed Parrot with Special Rule, and Correcting the Salmon-crested Cockatoo Special Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule and correcting amendment.

SUMMARY: We, the U.S. Fish and Wildlife Service, determine threatened status for the yellow-billed parrot (*Amazona collaria*) under the Endangered Species Act of 1973, as amended (Act). This final rule implements the Federal protections provided by the Act for this species. We are also publishing a special rule for this species. In addition, we are correcting the special rule for the salmon-crested cockatoo (*Cacatua moluccensis*), which published in the **Federal Register** on May 26, 2011.

DATES: This rule becomes effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: This final rule is available on the Internet at <http://www.regulations.gov> and comments and materials received, as well as supporting documentation used in the preparation of this rule, will be available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 400; Arlington, VA 22203.

FOR FURTHER INFORMATION CONTACT: Janine Van Norman, Chief, Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 420, Arlington, VA 22203; telephone 703-358-2171. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

I. Purpose of the Regulatory Action

We are listing the yellow-billed parrot as threatened under the Endangered Species Act (Act) (16 U.S.C. 1531 *et seq.*) because of continued threats from deforestation, the pet trade, the risk of disease transmission, predation, inadequate regulatory mechanisms, and hurricanes. The

species is only found on the island of Jamaica and has a fragmented and declining population. We are also publishing a special rule that allows the import into and export from the United States of certain captive-bred yellow-billed parrots, and certain acts in interstate commerce of yellow-billed parrots, without a permit under the Act.

We are also correcting the 2011 special rule for the salmon-crested cockatoo to incorporate the provision that certain acts in interstate commerce of salmon-crested cockatoos may proceed without a permit under the Act. This idea was discussed in detail in the 2009 proposed rule and 2011 final rule for this species, but the provision was inadvertently omitted from the language that we codified in the Code of Federal Regulations. This change clarifies the intent of the 2011 final special rule for the salmon-crested cockatoo.

II. Major Provision of the Regulatory Action.

This action lists the yellow-billed parrot as threatened on the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h), and allows the import into and export from the United States of certain captive-bred yellow-billed parrots, and allows certain acts in interstate commerce of yellow-billed parrots, without a permit under 50 CFR 17.32. This action is authorized by the Act.

We are also correcting the May 26, 2011 (76 FR 30758), special rule for the salmon-crested cockatoo, as discussed in this rule.

Background

The Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), is a law that was passed to prevent extinction of species by providing measures to help alleviate the loss of species and their habitats. Before a plant or animal species can receive the protection provided by the Act, it must first be added to the Federal List of Threatened and Endangered Wildlife or the Federal List of Threatened and Endangered Plants; section 4 of the Act and its implementing regulations at 50 CFR part 424 set forth the procedures for adding species to these lists.

Yellow-billed Parrot

Previous Federal Actions

On January 31, 2008, the Service received a petition dated January 29, 2008, from Friends of Animals, as represented by the Environmental Law Clinic, University of Denver, Sturm College of Law, requesting that we list 14 parrot species under the Act. The petition clearly identified itself as a petition and included the requisite information required in the Code of Federal Regulations (50 CFR 424.14(a)). On July 14, 2009 (74 FR 33957), we published a 90-day finding in which we determined that the petition presented substantial scientific and commercial information to indicate that listing may be warranted for 12 of the 14 parrot species. In our 90-day finding on this petition, we announced the initiation of a status review to list as endangered or threatened under the Endangered Species Act of 1973, as amended (Act), the following 12 parrot species: Blue-headed macaw (*Primolius couloni*), crimson shining parrot

(*Prosopeia splendens*), great green macaw (*Ara ambiguus*), grey-cheeked parakeet (*Brotogeris pyrrhoptera*), hyacinth macaw (*Anodorhynchus hyacinthinus*), military macaw (*Ara militaris*), Philippine cockatoo (*Cacatua haematuropygia*), red-crowned parrot (*Amazona viridigenalis*), scarlet macaw (*Ara macao*), white cockatoo (*Cacatua alba*), yellow-billed parrot (*Amazona collaria*), and yellow-crested cockatoo (*Cacatua sulphurea*). We initiated this status review to determine if listing each of the 12 species is warranted, and initiated a 60-day comment period to allow all interested parties an opportunity to provide information on the status of these 12 species of parrots. The public comment period closed on September 14, 2009.

On October 24, 2009, and December 2, 2009, the Service received a 60-day notice of intent to sue from Friends of Animals and WildEarth Guardians, for failure to issue 12-month findings on the petition. On March 2, 2010, Friends of Animals and WildEarth Guardians filed suit against the Service for failure to make timely 12-month findings within the statutory deadline of the Act on the petition to list the 14 species (*Friends of Animals, et al. v. Salazar*, Case No. 10 CV 00357 D.D.C.).

On July 21, 2010, a settlement agreement was approved by the Court (CV–10–357, D. D.C.), in which the Service agreed to submit to the **Federal Register** by July 29, 2011, September 30, 2011, and November 30, 2011, determinations as to whether the petitioned action is warranted, not warranted, or warranted but precluded by other listing actions for no fewer than four of the petitioned species on each date. On October 11, 2011, the Service published in the **Federal Register** a proposed rule to list the yellow-billed parrot as threatened under the Act with a proposed special rule (76 FR 62740).

Summary of Comments and Recommendations

We based this action on a review of the best scientific and commercial information available, including all information received during the public comment period. In the October 11, 2011, proposed rule, we requested that all interested parties submit information that might contribute to development of a final rule. We also contacted appropriate scientific experts and organizations and invited them to comment on the proposed listing and proposed special rule. We received comments from 5 individuals, one of which was from a peer reviewer.

We reviewed all comments we received from the public and peer reviewer for substantive issues and new information regarding the proposed listing of this species, and we address those comments below. Overall, the commenters and peer reviewer supported the proposed listing. Two comments included additional information for consideration; the remaining comments simply supported the proposed listing without providing scientific or commercial data.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from four individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received responses from one of the peer reviewers from whom we requested comments. The peer reviewer stated that the proposed rule adequately reviewed and analyzed existing

information. Some new information was provided for the species, as well as technical clarifications, as described below. Technical corrections suggested by the peer reviewer have been incorporated into this final rule. In some cases, a technical correction is indicated in the citations by “personal communication” (pers. comm.), which could indicate either an email or telephone conversation; in other cases, the research citation is provided.

Peer Reviewer Comments

(1) Comment: The peer reviewer provided comments and additional literature regarding the yellow-billed parrot’s habitat, diet, and nesting areas.

Our Response: We reviewed the additional literature provided and updated the *Species Description* section below.

(2) Comment: The peer reviewer provided some clarifying information regarding threats to the yellow-billed parrot from conversion of natural forests to pine plantations. According to the peer reviewer, conversion to pine plantations is no longer a threat given the current Forestry Department Management Plan.

Our Response: The 1991 literature stating that natural forests were being converted to pine plantations and other fast-growing species was based on literature from 1953, 1971, and 1981. Since 1991, Jamaica’s Forestry Department prepared the National Forest Management and Conservation Plan (2001, p. ix), became an Executive Agency with better capabilities to

meet the needs of the forestry sector, and prepared the Strategic Forest Management Plan (2008, p. 9). These actions emphasize Jamaica's commitment to promoting and improving the conservation and sustainable use of the country's forest resources through protection, management, and restoration of forest resources. Furthermore, clearing of natural forests for tree plantations is generally considered to be unacceptable today on grounds of conservation and risk of erosion (Camirand 2002, p. 15). Given the more recent information provided by the peer reviewer and no additional information claiming conversion to pine plantations is a threat to natural forests, we have removed this statement from our discussion of habitat modification (Factor A); however, this did not change our finding regarding the effects of habitat modification on the yellow-billed parrot or our finding that the species meets the definition of a threatened species.

(3) Comment: The peer reviewer provided clarification on the restoration of mining areas. Because the substrate is removed through open-pit mining, the area is irreversibly altered and is impossible to restore to its original state.

Our Response: We have included information on the irreversible effects of mining provided by the peer reviewer in our discussion of mining, which further supports our conclusion concerning the effects of mining on the karst region.

(4) Comment: The peer reviewer provided information on a conservation action plan that was developed for the Cockpit Country by The Nature Conservancy–Jamaica, the Forestry Department, and other stakeholders in 2006.

Our Response: Fifteen actions were developed under the conservation action plan to mitigate threats to the Cockpit Country's biodiversity. These actions would also benefit the yellow-billed parrot and its habitat. Many actions have at least been partially implemented. We added the information provided by the peer reviewer to the "Conservation Programs" section under Factor A, below, but the information did not affect our finding regarding the effects of habitat modification on the yellow-billed parrot or our finding that the species meets the definition of a threatened species.

(5) Comment: The peer reviewer provided information on a major poaching event that took place in Jamaica. In April 2011, 74 parrot eggs were smuggled out of Jamaica and confiscated in Austria. Of the 45 chicks that were successfully reared, 24 were yellow-billed parrots. The peer reviewer also provided comments on subsequent impacts to the yellow-billed parrot from additional poaching, the possible use of the confiscated birds for research and captive breeding, the potential repatriation of the parrots to Jamaica, and the risk of disease transmission to yellow-billed parrots if repatriated to Jamaica.

Our Response: We reviewed the information and comments provided by the peer reviewer. As a result of the information, we determined that international trade in Jamaican wildlife, including yellow-billed parrots, is on the rise. In light of this information, we reevaluated threats to the species from poaching for international trade and disease. Although we did find illegal international trade and the risk of disease transmission were threats to the yellow-billed parrot, this information did not change our finding that the species meets the

definition of a threatened species.

(6) Comment: The peer reviewer provided information indicating that the temporary ban on the importation of nonnative parrot species into Jamaica has been lifted and provided comments on the risk of disease transmission and hybridization to the yellow-billed parrot.

Our Response: In light of the information, we reevaluated threats to the species from disease (Factor C), hybridization (Factor E), and competition with nonnative species (Factor E). We found that the risk of disease transmission to yellow-billed parrots and the risk of hybridization or competition with nonnative parrot species are elevated given the termination of the ban on importation of nonnative parrot species into Jamaica. However, this information did not change our finding that the species meets the definition of a threatened species.

(7) Comment: The peer reviewer provided information indicating that Austria may develop a captive breeding program for the yellow-billed parrot in Europe using the yellow-billed parrots confiscated in 2011. The peer reviewer expressed concern over the avenue this could open for additional parrots to be poached in the wild and laundered through legal trade.

Our Response: We reviewed the information provided by the peer reviewer. It is unknown whether the parrots will be used for research and captive breeding purposes or if they will be repatriated to Jamaica. We have added to Factor B, below, a discussion on trade in light of a potential captive breeding program.

(8) *Comment:* The peer reviewer provided additional information and comments on the effects of climate change on the yellow-billed parrot.

Our Response: The information and comments provided by the peer reviewer further supported our conclusion regarding climate change, increased frequency and intensity of hurricanes, and the effects to the yellow-billed parrot. The information has been added to our discussion of hurricanes under Factor E.

Public Comments

(9) *Comment:* The Jamaica National Environment and Planning Agency clarified that there is no government policy statement on mining in the Cockpit Country.

Our Response: This comment is related to information we found, and included in the proposed rule, and information submitted by the peer reviewer indicating that the Jamaican Government, specifically the former Prime Minister of Jamaica, had stated that the government does not intend to allow mining in the Cockpit Country. We have added the information regarding the absence of a policy on mining in the Cockpit Country to our analysis under Factor A, below.

(10) *Comment:* The Jamaica National Environment and Planning Agency provided information on planned conservation actions in Cockpit Country. In 2011, it was stated that the boundary of the Cockpit Country should be determined and a management plan for the area be developed. The Jamaican Government and the Jamaica Environment Action Network were

asked to work together to develop the management plan.

Our Response: These actions could potentially benefit the yellow-billed parrot and its habitat if implemented; however, to date, no decision has been made regarding the boundary of the Cockpit Country, nor has a management plan been put forward. We have added this information to the “Conservation Programs” section under Factor A, below, although the information did not influence our finding regarding the effects of habitat modification on the yellow-billed parrot or our finding that the species meets the definition of a threatened species.

(11) Comment: The Jamaica National Environment and Planning Agency provided information on requirements under Jamaica’s Natural Resources Conservation (Permits and License) Regulations and requested that we include this information in our analysis. Specifically, mining, quarrying, and mineral processing require an environmental permit, but environmental permits do not automatically require an environmental impact assessment.

Our Response: We have included this information in our discussion of mining under Factor A, below, to clarify the environmental requirements of mining in Jamaica. This information, however, did not alter our finding regarding the effects of mining on the habitat of the yellow-billed parrot or our finding that the species meets the definition of a threatened species.

Summary of Changes from the Proposed Rule

We fully considered comments from the public and the peer reviewer on the proposed rule to develop this final listing of the yellow-billed parrot. This final rule incorporates changes to our proposed listing based on the comments that we received that are discussed above and newly available scientific and commercial information. We made some technical corrections and reevaluated threats to the species from disease and competition with nonnative species based on new information. Although our analysis of these potential threats is different from that in our proposed rule, none of the information changed our determination that listing this species as threatened is warranted. In addition, in this final rule, we are publishing a correcting amendment to the 2011 special rule for the salmon-crested cockatoo (76 FR 30758, May 26, 2011), as described below under the heading **Correction to the Salmon-crested Cockatoo Special Rule**.

Species Information and Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533) and implementing regulations (50 CFR Part 424) set forth procedures for adding species to, removing species from, or reclassifying species on the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, a species may be determined to be endangered or threatened based on any of the following five factors:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

In considering whether a species may warrant listing under any of the five factors, we look beyond the species' exposure to a potential threat or aggregation of threats under any of the factors, and evaluate whether the species responds to those potential threats in a way that causes actual impact to the species. The identification of threats that might impact a species negatively may not be sufficient to compel a finding that the species warrants listing. The information must include evidence indicating that the threats are operative and, either singly or in aggregation, affect the status of the species. Threats are significant if they drive, or contribute to, the risk of extinction of the species, such that the species warrants listing as endangered or threatened, as those terms are defined in the Act.

Species Description

The yellow-billed parrot belongs to the family Psittacidae and is one of only two *Amazona* species endemic to Jamaica (Koenig 2001, p. 205; Snyder *et al.* 2000, p. 106). It measures approximately 28 centimeters (cm) (11 inches (in)) in length. This species is generally characterized as a green parrot with white lores (between the eye and bill) and frontal bar (forehead), a blue crown, pink throat and upper breast, bluish primary feathers, and a yellow bill (BLI 2011a, unpaginated; Forshaw and Knight 2010, p. 278).

This species primarily occurs in mid-level (up to 1,200 meters (m) (3,937 feet (ft))), wet limestone and lower montane, mature forests of Jamaica; however, it also occurs at lower densities, perhaps seasonally, based on availability of food sources, in low elevation (20–100 m

(65.6–328 ft)) mesic forests near the coastline (Koenig 2011, personal communication (pers. comm.); TEMNL 2005, p. 128). The late successional forest canopy height ranges from 15–20 m (49–66 ft), with occasional emergence of *Terminalia* and *Cedrela* tree species at 25–30 m (82–98 ft) (BLI 2011a, unpaginated; World Parrot Trust, 2009, unpaginated; Tole 2006, p. 790; Koenig 2001, pp. 205–206; Koenig 1999, p. 9; Wiley 1991, pp. 203–204). Undergrowth is thin, but mosses, vines, lianas, and epiphytes are abundant (Tole 2006, p. 790; Koenig 2001, p. 206). They may also be found near cultivated areas with trees at forest edge (World Parrot Trust 2009, unpaginated; Tole 2006, p. 790). Compared to the other endemic Jamaican parrot species, the black-billed parrot (*Amazona agilis*), breeding pairs of yellow-billed parrots appear to prefer interior forests, but the species regularly feeds in edge habitat (Koenig 2011, pers. comm.; Koenig 2001, pp. 207–208, 220).

In the latter part of the 20th century, the overall range and population of the yellow-billed parrot decreased (Juniper and Parr 1998 in BLI 2011a, unpaginated). The range of the yellow-billed parrot is estimated to be 5,400 square kilometers (km²) (2,085 square miles (mi²)) (approximately half the total area of Jamaica) (BLI 2011a, unpaginated). However, this species occurs in fragments within this range. The greatest occurrences are concentrated in extant mid-level wet igneous and limestone forests in the Blue Mountains, Cockpit Country, John Crow Mountains, and Mount Diablo (BLI 2011a, unpaginated; Koenig 2001, p. 205; Snyder *et al.* 2000, p. 106; Koenig 1999, pp. 9–10; Wiley 1991, pp. 203–204). Preliminary studies estimated 5,000 individuals in Cockpit Country, John Crow Mountains, and Mount Diablo (Snyder *et al.* 2000, p. 107). Today the yellow-billed parrot population is estimated to number 10,000 to 20,000 mature individuals, although the data quality is poor (BLI 2011a, unpaginated; World

Parrot Trust, 2009, unpaginated). Cockpit Country is considered the stronghold of the species with an estimated 5,000 to 8,000 territorial pairs, at least 80 percent of the island's entire population (BLI 2011a, unpaginated; BLI 2011b, unpaginated; Koenig 2001, p. 205; Snyder *et al.* 2000, p. 107). Flocks of 50 to 60 individuals are observed year round, and this species remains common in suitable habitat (BLI 2011a, unpaginated; Snyder *et al.* 2000, p. 106; Wiley 1991, p. 204); however, the yellow-billed parrot has declined, and is declining, in numbers and range based on habitat loss and degradation and trapping (BLI 2011a, unpaginated; Snyder *et al.* 2000, p. 106; Koenig 1999, p. 9; Wiley 1991, pp. 187, 204).

Like most parrot species, the yellow-billed parrot is a frugivore, and feeds on catkins, nuts, berries, fruits, blossoms, figs, and seeds (Jamaica Observer 2011b, unpaginated; World Parrot Trust, 2009, unpaginated). Parrots, including this species, generally fly considerable distances in search of food (Koenig 2011, pers. comm.; BLI 2011a, unpaginated; Lee 2010, p. 8). Because parrots feed primarily on fruits and flowers, they are linked to the fruiting and flowering patterns of trees; fluctuations in abundance and availability of these food sources may change diets, result in movements to areas with greater food availability, and influence local seasonal patterns of bird abundance (BLI 2011a, unpaginated; Lee 2010, p. 7; Tobias and Brightsmith 2007, p. 132; Brightsmith 2006, p. 2; Renton 2002, p. 17; Cowen n.d., pp. 5, 23).

The breeding season begins in March, with yellow-billed parrots looking for and defending nest sites, and ends in late July, the end of the fledgling period (BLI 2011a, unpaginated; Koenig 2001, p. 208). Mated pairs of yellow-billed parrots appear to be monogamous (Koenig 1998, unpaginated). Yellow-billed parrots are believed to require larger,

mature trees for nesting; these parrots do not excavate holes, but make use of existing ones found in old growth forests. This may explain why this species is more common, especially when nesting, in interior forests, although they have been found in other habitat types, including disturbed plantations (NEPA 2010b, unpaginated; Snyder *et al.* 2000, p. 107; Koenig 2001, p. 220). Clutch size is typically 3 eggs measuring 36.0 x 29.0 mm (1.4 x 1.1 in) (World Parrot Trust 2009, unpaginated; Koenig 2001, p. 212). *Amazona* species tend to lay one egg every other day, and the female alone incubates (Koenig 2001, p. 209). Nesting success has been low, with studies showing 70 percent of breeding pairs in Cockpit Country exploring and defending nest sites, but failing to lay eggs (Snyder *et al.* 2000, p. 107). Outside of the breeding season, yellow-billed parrots have been seen in large communal roosts (World Parrot Trust 2009, unpaginated).

Conservation Status

The yellow-billed parrot is currently classified as “vulnerable,” which means this species is facing a high risk of extinction in the wild, by the International Union for Conservation of Nature due to the small, fragmented, and declining range of this species; a decline in extent, area, and quality of suitable habitat due to logging and mining; and trapping (BLI 2011a, unpaginated; Snyder *et al.* 2000, p. 106). This species is also listed in Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II, which includes species that although not necessarily now threatened with extinction may become so unless trade is strictly regulated. The yellow-billed parrot is also listed under the Second Schedule of Jamaica’s Endangered Species (Protection, Conservation and Regulation of Trade) Act.

A. Present or threatened destruction, modification, or curtailment of habitat or range.

Historically, 97 percent of Jamaica was a closed-forest ecosystem. After centuries of improper land use and a high rate of deforestation, the island has lost much of its original forest (Berglund and Johansson 2004, pp. 2, 5; Evelyn and Camirand 2003, p. 354; Koenig 2001, p. 206; Koenig 1999, p. 9). Some of the most important parrot habitat was protected from human activities by its inaccessibility, but today, even these areas are being encroached upon and degraded. Conversion of forest land to agriculture and pasture has accounted for a majority of deforested land and has resulted in the removal of valuable timber species as a byproduct, with natural regrowth removed as soon as it approaches marketable size (Eyre 1987, p. 342).

Today, Jamaica's forested area is estimated at 337,000 hectares (ha) (832,745 acres (ac)), or 31 percent of the total land area (FAO 2011, p. 116). Only 8 percent of Jamaica's total land area is classified as minimally disturbed closed broadleaf forest, and this type of forest only occurs on the steepest or most remote, inaccessible parts of the island (Koenig 2011, pers. comm.; Levy and Koenig 2009, p. 262; Evelyn and Camirand 2003, p. 359; National Forest Management and Conservation Plan 2001, pp. ix, 20; WWF 2001, unpaginated; Koenig 1991, p. 9). This loss in forested habitat has resulted in a small and fragmented range for the yellow-billed parrot; a decline in the extent, area, and quality of suitable habitat; and a decline in the yellow-billed parrot population (BLI 2011a, unpaginated; World Parrot Trust 2009, unpaginated; Koenig 1999, p. 9). The greatest long-term threats to Jamaica's remaining population of the yellow-billed parrot is deforestation via logging, agriculture, mining, road construction, and

encroachment of nonnative species (BLI 2011a, unpaginated; NEPA 2010b, unpaginated; Levy and Koenig 2009, pp. 263-264; World Parrot Trust 2009, unpaginated; JEAN 2007, p. 4; John and Newman 2006, pp. 7, 15; Tole 2006, p. 799; Snyder *et al.* 2000, p. 106; Koenig 1999, p. 10; Varty 1991, pp. 135, 145; Wiley 1991, p. 190; Windsor Research Center n.d., unpaginated).

Cockpit Country is characterized by yellow and white limestone karst topography with rounded peaks and steep-sided, bowl-shaped depressions, known as cockpits (John and Newman 2006, p. 3; Tole 2006, p. 789). Historically, the edge forests of Cockpit Country experienced extensive clear-cutting for timber, but the rugged terrain and inaccessibility of Cockpit Country have prevented extensive resource exploitation in its interior forests (Koenig 2001, pp. 206–207; Wiley 1991, p. 201). This area has retained nearly all of its primary forest and is an important remaining tract of extensive primary forest in Jamaica; 81 percent of the region is under forest (John and Newman 2006, p. 3; Tole 2006, pp. 790, 795, 798). However, gaps indicate the beginning of a decline in contiguity and connectivity, and the periphery and surrounding plains are already badly degraded (Tole 2006, pp. 790, 797; Koenig 2001, pp. 201–207). The greatest threat to the wet limestone forest habitat of Cockpit Country is deforestation due to bauxite mining. Additional threats include deforestation from road construction, conversion of forests for agriculture, poor agricultural practices, and logging (BLI 2011b, unpaginated; Levy and Koenig 2009, p. 267; JEAN 2007, p. 4; BLI 2006, unpaginated; John and Newman 2006, p. 15; Wiley 1991, p. 201; Windsor Research Centre n.d., unpaginated).

The Blue Mountains and John Crow Mountains are located on the eastern side of Jamaica and are separated by the Rio Grande. Almost all of the two ranges were designated forest

reserves and contain important remaining tracts of closed-canopy, broadleaf forest (TNC 2008b, unpaginated). In 1989, 78,200 ha (193,236 ac) were designated as the Blue and John Crow Mountains National Park (BLI 2011d, unpaginated; BLI 2011e, unpaginated; Dunkley and Barrett 2001, p. 1). The most significant threats to the Blue and John Crow Mountains are deforestation due to subsistence farming, commercial farming, and illegal logging, and the encroachment of invasive species (BLI 2011e, unpaginated; IUCN 2011, unpaginated; Chai *et al.* 2009, p. 2489; Dunkley and Barrett 2001, p. 2; WWF 2001, unpaginated; TNC 2008b, unpaginated).

Mount Diablo is located in the center of Jamaica and makes up part of the “spinal forest,” the forests along the main mountain ridges that extend along the center of the island. Conversion of forest for agriculture land, forestry plantations, expanding settlements, and bauxite mining has left the spinal forest severely fragmented (BLI 2011c, unpaginated).

Logging and Agriculture

In the Cockpit Country Conservation Action Plan, threats to the limestone forests from conversion of forest, incompatible agriculture practices, and timber extraction are ranked high (John and Newman 2006, p. 15). The immediate vicinity of Cockpit Country has a population of around 10,000 people who exploit the area (Day 2004, p. 34). Illegal logging and farming have extended into the forest reserve within Cockpit Country (Day 2004, p. 34; Chenoweth *et al.* 2001, p. 651). Loggers, legal and illegal, are removing unsustainable amounts of trees for furniture factories and other industries (TNC 2008a, unpaginated). Illegal logging opens new pathways into the forest for squatters who usually clear a patch for growing food, then move on

after one season to clear additional land (Tole 2006, p. 799). Farmers remove natural forests from cockpits, glades, and other accessible areas to plant yam, corn, dasheen, banana, plantain, and sugar cane, and to graze cattle and goats (TNC 2008a, unpaginated; Day 2004, p. 35; Chenoweth *et al.* 2001, p. 652).

One of the greatest causes of deforestation and fragmentation in Cockpit Country is the illegal removal of wood for yam crops and yam sticks (JEAN 2007, p. 4; Tole 2006, p. 790; Chenoweth *et al.* 2001, p. 653). Farmers clear hillsides to plant yam crops, reducing forest cover and nesting trees. Yam plants require a support stake that is typically a sapling approximately 8–10 cm (3–4 in) in diameter. With suitable trees dwindling elsewhere, Cockpit Country is quickly becoming a source of supply. Forty percent of the total demand for yam sticks is supplied by Cockpit Country; this translates to 5 to 9 million saplings harvested annually from Cockpit Country alone (Tole 2006, pp. 790, 799). Yam stick harvesting is ranked as a medium threat to the limestone forests of Cockpit Country (John and Newman 2006, p. 15).

Adjacent to the Blue and John Crow Mountains National Park are isolated communities that rely on the park's resources for various economic activities; with almost unchecked access to the park, encroachment of these communities across the park boundary is cause for concern (IUCN 2011, unpaginated; Dunkley and Barrett 2001, pp. 2–3). Much of the area has been altered from its natural state and is used for forestry, coffee production, or subsistence farming (BLI 2011d, unpaginated). The adjacent communities have a tradition of small farming, and, despite the steep slopes, hillsides are cleared and used by small subsistence farmers for carrots, peas, bananas, plantains, coconuts, pineapples, apples, cabbages, and tomatoes; coffee is also

grown by small and large farmers for the well-known brand Blue Mountain Coffee (Dunkley and Barrett 2001, pp. 1, 3). Farmers use slash-and-burn techniques to clear forests for agricultural land; however, because of poor agricultural practices, the soil quality begins to deteriorate after one or two seasons, and farmers abandon their plots and clear additional land for new crops (Chai *et al.* 2009, p. 2489; TNC 2008b, unpaginated).

The human population surrounding Mount Diablo is steadily growing. Native vegetation is removed for housing, crop cultivation, and lumber. In this area, farming is the main livelihood after bauxite mining. Slash-and-burn practices are used on hillsides to clear land for cash crops, such as banana, plantain, yam, cabbage, okra, pepper, and tomato. Various tree species are cut for lumber and add to the deforestation and poor condition of the soils (Global Environmental Facility, Small Grants Programme (GEF SGP) 2006, unpaginated). Native forests are also removed for forestry plantations, including pine (*Pinus caribaea*), blue mahoe (*Hibiscus elatus*), bigleaf mahogany (*Swietenia macrophylla*), and cedar (*Cedrela odorata*). These activities have left the mountain without any native vegetation and the central spinal forest severely fragmented.

Bauxite Mining

Bauxite is the raw material used to make aluminum and is Jamaica's principle export, accounting for over half of Jamaica's annual exports. Bauxite deposits occur in pockets of limestone and can be found under 25 percent of the island's surface (BLI 2006, unpaginated). It is removed through open pit mining (soil is removed, stored, and then replaced following completion of the mine) and is considered the most significant cause of deforestation in Jamaica (Berglund and Johansson 2004, p. 2). Bauxite mining is driving habitat destruction across the

center of the island, including Mount Diablo, and has the potential to permanently destroy forests, including the wet limestone habitat found in Cockpit Country, resulting in irreversible effects on the yellow-billed parrot (Levy and Koenig 2009, p. 267; BLI 2006, unpaginated; John and Newman 2006, p. 7; Berglund and Johansson 2004, p. 6; Wiley 1991, p. 201; Windsor Research Centre n.d., unpaginated).

Within the past 50 years, bauxite mining has severely fragmented the spinal forests of Jamaica (BLI 2011c, unpaginated). In the past 40 years, Mount Diablo has been subjected to bauxite mining, which has destroyed much of the area beyond repair and is presumed to have contributed to the decline of populations of forest-dependent species, such as the yellow-billed parrot (BLI 2008, unpaginated; Koenig 2008, p. 145; Varty 2007, pp. 34, 93). In 2009, several bauxite/alumina mining companies closed their refineries due to a drop in demand; however, in July 2010, an alumina plant in Ewarton, a town located at the foot of Mount Diablo, reopened due to a return in demand. Where mining has occurred, it has resulted in severe impacts to the environment. For example, mining sites within Mount Diablo that were completed 10–15 years ago typically have only herbaceous groundcover, including nonnative ferns, and no regeneration of native woody tree species (BLI 2011c, unpaginated).

Bauxite mining is currently the most significant threat to Cockpit Country. It is ranked high in threats to the limestone forests in Cockpit Country (John and Newman 2006, p. 15). Bauxite deposits can be found throughout 70 percent of Cockpit Country, and mining companies have already drilled for bauxite samples (BLI 2006, unpaginated; John and Newman 2006, p. 7; Walker 2006, unpaginated; Windsor Research Centre, n.d., unpaginated). In 2006, ALCOA

Minerals of Jamaica and Clarendon Alumina Production were granted a renewal on two bauxite prospecting licenses, which encompassed more than 60 percent of the Cockpit Country Conservation Area and more than 42,000 ha (103,784 ac) of nearly contiguous primary forest. After public outcry, these licenses were suspended. In 2007, the former Prime Minister of Jamaica, Bruce Golding, declared that the government will not allow any mining activity in the Cockpit Country (Koenig 2011, pers. comm.). However, there is no official policy by the Government of Jamaica on mining in the Cockpit Country (Strong 2011, pers. comm.), and the area continues to be described by officials and ministers as an area of high-quality bauxite and limestone deposits. Thus, the area remains open to future prospecting, and mining interests are granted over other land uses, such as timber, agriculture, and conservation (Koenig 2011, pers. comm.; Koenig 2008, pp. 135-137; TNC 2008a, unpaginated; JEAN 2007, p. 4; Walker 2006, unpaginated).

Few lands are excluded from mining or prospecting under Jamaica's Mining Act, including 22,000 ha (54,363 ac) of Cockpit Country designated as forest reserves, which could be subject to prospecting or mining if a license or lease is obtained (JEAN 2007, p. 6). Additionally, in some, if not all, mining agreements, the Jamaican Government provides mining companies with entitlements to specific amounts of bauxite and guarantees them additional land for mining if the original land does not contain sufficient levels, further contributing to deforestation (JEAN 2007, p. 8). Although bauxite extraction is not currently occurring in Cockpit Country, mining remains a significant impending threat to the area. The amount of deposits found throughout the area, and the fact that the area remains open to future prospecting

and that bauxite is Jamaica's principle export, leaves open the possibility that mining may occur in the future (JEAN 2007, p. 4; Windsor Research Centre n.d., unpaginated).

If mining were to occur in Cockpit Country, the impacts to the wet limestone forest habitat and wildlife would be irreversible (Varty 2007, p. 93; Windsor Research Centre n.d., unpaginated). During the prospecting phase, a company or individual is required to obtain a prospecting right from the Jamaican Government; however, this does not require an environmental permit, which requires an environmental impact assessment be conducted before being granted (Jamaica Ministry of Energy and Mining 2006a, unpaginated). Forests are cleared during this phase using heavy machinery to create roads for transporting drilling equipment. Once the area of interest has been identified and the existence of a commercially exploitable mineral exists, a mining lease must be obtained to mine and sell the product. Mining, quarrying, and mineral processing require an environmental permit under Jamaica's natural resources conservation (permits and license) regulations; however, an environmental impact assessment is not an automatic requirement during this phase either (Strong 2011, pers. comm.). Additionally, one of the problems with conservation in Jamaica is incomplete and improper environmental impact assessments when they are required (Levy and Koenig 2009, p. 263). The mining phase requires a more extensive road network, and all the vegetation covering bauxite deposits are removed. Mining in a karst region can lead to altered flow regimes and changes in drainage patterns, and can reduce the soil's water retention capability, making it impossible to restore the area to its original state (JEAN 2007, pp. 4–5; Berglund and Johansson 2004, p. 6). After mining is completed, companies are required to restore lands destroyed by mining. However, a typical restored site consists of a thin layer of topsoil bulldozed over densely packed limestone gravel

and planted with nonnative grasses, preventing the regeneration of native forests (Koenig 2008, p. 141; BLI 2006, unpaginated). Penalties for failing to meet the reclamation requirements are often not enforced (BLI 2006, unpaginated).

Bauxite mining has been shown to significantly impact native species and their habitats. The forests of Mount Diablo have already suffered significant damage from bauxite mining, leading to the conclusion that mining cannot be allowed in Cockpit Country or it would destroy the area beyond repair (Varty 2007, p. 93). Because of the potential damage to the nesting environment, bauxite mining could drive the yellow-billed parrot population to critically low levels and potentially put it at risk of extinction (Koenig 2008, p. 147).

Roads

Access roads associated with bauxite mining are another significant cause of deforestation and a serious threat to the forest cover of Jamaica. Once established, either in the prospecting or mining phase, loggers use mining roads to gain access to additional forests and illegally remove trees in and around the mining area (BLI 2011a, unpaginated; JEAN 2007, pp. 4–5; Berglund and Johansson 2004, p. 6). If mining were to occur in Cockpit Country, roads established to access the cockpit bottoms would fragment the habitat, isolate forested hillsides, and increase the amount of edge habitat (Koenig 2008, pp. 141, 144). Improved human access via mining roads and the subsequent alteration in habitat and predator-prey dynamics (see Factor C discussion, below) are predicted to hasten the decline of the yellow-billed parrot.

In addition to mining access roads, road construction and extensive trail systems have the potential to contribute to further deforestation or alter environmental conditions. Roads provide access to previously undisturbed forests. In Cockpit Country, forest clearance has occurred along the edge where roads have provided easy access (JEAN 2007, p. 4). Interior forests were once inaccessible; however, continued road construction into these areas will lead to increased deforestation and logging (WWF 2001, unpaginated). Construction of Highway 2000 along the southern boundary of Cockpit Country may threaten the area through subsequent logging and the need for limestone fill, which could be quarried from Cockpit Country (Day 2004, p. 35; Windsor Research Centre no date, unpaginated). Roads and trails are ranked high in threats to the limestone forest of Cockpit Country (John and Newman 2006, p. 15). Additionally, roads and trails create openings in the forest, exposing it to new environmental conditions that alter the high-humidity conditions in which species of wet limestone habitat are adapted and that facilitates the spread of invasive species (JEAN 2007, p. 4; Windsor Research Centre no date, unpaginated).

Nonnative Species

Forest clearance, whether through mining, road/trail development, logging, or agriculture, not only reduces the size of continuous forests and opens them up to further deforestation, it also alters the natural environment and facilitates the spread of harmful nonnative plants and animals (JEAN 2007, p. 4; Windsor Research Centre n.d., unpaginated). Nonnative, invasive plant species have the ability to outcompete and dominate native plant communities and are ranked high in threats to the limestone forests of Cockpit Country (John and Newman, 2006, p. 15). The many years of land clearance experienced by the Blue and John Crow Mountains National Park

has led to the expansion of invasive species, including wild coffee (*Pittosporum undulatum*) and ginger lily (*Hydium spicatum*), which are invading and quickly spreading in closed-canopy forests (BLI 2011d, unpaginated; TNC 2008b, unpaginated; JEAN 2007, p. 4; Windsor Research Centre no date, unpaginated). Nonnative species prevent the regeneration of native forests so that rare, late-successional species typical of old growth forests are replaced by common secondary species or nonnative species (Chai *et al.* 2009, p. 2490; Koenig 2008, p. 142; TNC 2008b, unpaginated).

Impacts of Deforestation

Deforestation through mining, road construction, logging, and agriculture contributes to the loss of Jamaica's remaining primary forest, habitat for the yellow-billed parrot, and essential resources for the life functions of the yellow-billed parrot. The removal of trees reduces food sources, shelter from inclement weather, and most importantly, nesting sites, which are reported to be limited (NEPA 2010b, unpaginated; Tole 2006, pp. 790–791; Koenig 2001, p. 206; Koenig 1999, p. 10; Wiley 1991, p. 190). The removal of saplings for yam sticks eliminates the source of regeneration for mature trees in which nesting cavities will form. Deforestation also changes the quality of remaining resources (Koenig 2001, p. 206; Koenig 1999, p. 10) and prevents the regeneration of native forests. The agricultural practices of farmers leave the land unfertile and unstable, especially on hillsides. Cash crops do not have a sufficient root system to hold soil, and the loss of the forest canopy leaves the soil vulnerable to impacts from rainfall, resulting in massive soil erosion (GEF SGP 2006, unpaginated). This decrease in the quality of the land prevents native forests from regenerating (Dunkley and Barrett 2001, p. 2; WWF 2001, unpaginated). Furthermore, deforestation also allows human disturbance to extend farther into

the interior of the forest, contributing to further deforestation, altering the habitat, and affecting the predator/prey balance (see Factor C discussion, below) (Tole 2006, pp. 790-791; Koenig 1999, pp. 11-12). Threats to the limestone forest of Cockpit Country overall are considered very high (John and Newman 2006, p. 15).

Deforestation can also change the species composition and structure of a forest, rendering it unsuitable for the yellow-billed parrot. Openings in the forest expose the forest edge to new environmental conditions, such as increased sunlight and airflow, altering the microclimate from the highly humid conditions of the interior forest, to which species such as the yellow-billed parrot are adapted (JEAN 2007, p. 4; Tole 2006, p. 798; Windsor Research Centre no date, unpaginated). The new environmental conditions facilitate the establishment of nonnative species and prevent the regeneration of native forests; rare, late-successional species typical of old growth forests are replaced by common secondary species or nonnative species (Chai *et al.* 2009, p. 2490; Koenig 2008, p. 142; TNC 2008b, unpaginated). This resulting “edge habitat” can exert a strong effect on species; birds have been shown to be affected from 50 m (164 ft) to 250 m (820 ft) from the cleared edges (Chai *et al.* 2009, p. 2489). Studies on the black-billed parrot found that Jamaican boa’s (*Epicrates subflavus*) abundance and accessibility of parrot nests to boas were higher in forest edge than in the interior (see Factor C discussion, below) (Koenig *et al.* 2007, p. 87). Only 26 percent of black-billed parrot nests located in regenerating edge habitat successfully fledged at least one chick, whereas 60 percent of nests in moderately disturbed interior forests successfully fledged at least one nestling (Koenig *et al.* 2007, p. 86). Of 35 nests that failed, 50 percent experienced predation in regenerating edge, compared to none in the interior forest (Koenig *et al.* 2007, p. 86). Fecundity was found to decline in edge habitat;

it was more than 60 percent lower than that of the interior, a level inadequate for population persistence (Koenig 2008, pp. 143, 145; Koenig *et al.* 2007, p. 86).

Conservation Programs

Conservation International, Southern Trelawny Environmental Agency, the Windsor Research Centre, and Jamaica's Forestry Department are working together to produce a long-term protection strategy for Cockpit Country. Part of the strategy involves the use of plastic Yam sticks, incentive programs to encourage farmers to set aside 40 ha (99 ac) of forest as a reserve, training members of the community as enforcement officers, and restoring abandoned land with native species (Tole 2006, p. 800). We do not know the status of this program or what goals have been achieved.

A conservation action plan (CAP) was developed for Cockpit Country/Martha Brae Watershed by The Nature Conservancy-Jamaica, Jamaica's Forestry Department, and other stakeholders in 2006. The CAP is based on the Martha Brae Watershed Unit, with the southern boundary extended to include sections of the Cockpit Country Forest Reserve that fall outside of the management unit. Fifteen actions were developed to mitigate threats to the Cockpit Country's biodiversity, which will also benefit the yellow-billed parrot and its habitat. Many actions have been at least partially implemented. Three local forest management communities have been created around Cockpit Country, and bi-monthly meetings are held for environmental outreach and to engage communities in identifying alternative income-generating projects. Some forest restoration has been implemented, with a focus on using native tree species. An economic valuation of Cockpit Country was to be completed by the end of 2011. This valuation, when

completed, will be widely distributed so that policy-makers, communities, nongovernmental organizations, and the wider public may become aware of the fact that damaging or destroying ecosystems and cultural services has a financial cost to present and future generations (Koenig 2011, pers. comm.). We did not find information indicating this action has been completed.

In October 2011, the Jamaican government, along with the Jamaica Environment Action Network, were asked to work together to determine the boundary of the Cockpit Country and develop a management plan for the area. To date, no decision has been made on the boundary, nor has a management plan been put forward (Strong 2011, pers. comm.).

Within the Blue and John Crow Mountains National Park, there are programs aimed at controlling nonnative species. Parks in Peril and the Jamaica Conservation and Development Trust established a nursery as a forest restoration project; timber and fruit trees are distributed to adjacent communities for planting (TNC 2008b, unpaginated). The success of this program is unknown.

Summary of Factor A

The yellow-billed parrot is restricted to the island of Jamaica. Past deforestation has resulted in a small and fragmented range on the island, a decline in the extent and quality of suitable habitat, and a declining yellow-billed parrot population. The remaining populations of yellow-billed parrot continue to face impacts to their habitat from deforestation. Mining, road and trail construction, logging, agriculture, and encroachment of nonnative species remove natural forests and have irreversible effects that prevent the regeneration of native vegetation so

that late-successional species typical of old growth forests are replaced by common secondary species or nonnative species. Removal of these forests without adequate regeneration permanently eliminates shelter and trees vital for foraging and nesting activities. Without these essential resources, the populations of the yellow-billed parrot will likely continue to decline. Additionally, deforestation fragments the remaining habitat and can increase the amount of edge habitat, altering predator-prey dynamics (see Factor C discussion, below). Increases in edge habitat can decrease the fecundity and recruitment of the yellow-billed parrot, accelerating the decline of the species.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Harvesting of parrot chicks for pets has seriously affected most of the parrot species in the West Indies (Wiley 1991, p. 191). In Jamaica, illegal poaching for the pet trade and farmers who shoot them to protect their crops have contributed to the decline of the yellow-billed parrot (BLI 2011a, unpaginated; Sylvester 2011, unpaginated; Jamaica Observer 2011b, unpaginated; Koenig 2008, p. 145; JEAN 2007, p. 4; Snyder *et al.* 2000, p. 107; Windsor Research Center n.d., unpaginated).

In 1981, the yellow-billed parrot was listed in Appendix II of CITES. CITES is an international agreement between governments to ensure that the international trade of CITES-listed plant and animal species does not threaten species' survival in the wild. There are currently 175 CITES Parties (member countries or signatories to the Convention). Under this treaty, CITES Parties regulate the import, export, and reexport of specimens, parts, and products

of CITES-listed plant and animal species (also see discussion under Factor D, below). Trade must be authorized through a system of permits and certificates that are provided by the designated CITES Scientific and Management Authorities of each CITES Party (CITES 2010a, unpaginated).

For species listed in Appendix II of CITES, commercial trade is allowed. However, CITES requires that before an export of Appendix-II specimens can occur, a determination must be made that the specimens were legally obtained (in accordance with national laws) and that the export will not be detrimental to the survival of the species in the wild, and a CITES export document must be issued by the designated CITES Management Authority of the country of export and must accompany the export of the specimens.

According to worldwide trade data obtained from UNEP–WCMC CITES Trade Database, from 1981, when the species was listed in CITES, through 2009, 210 yellow-billed parrot specimens were reported in international trade, including 208 live birds, 1 scientific specimen, and 1 body. In analyzing these reported data, several records appear to be overcounts due to slight differences in the manner in which the importing and exporting countries reported their trade, and it is likely that the actual number of specimens of yellow-billed parrots reported to UNEP-WCMC in international trade from 1981 through 2009 was 195, including 193 live birds, 1 scientific specimen, and 1 body. Of these specimens, 11 (5.6 percent) were reportedly exported from Jamaica (UNEP–WCMC 2011, unpaginated). With the information given in the UNEP–WCMC database, from 1981 through 2009, only 1 wild specimen of yellow-billed parrot was reported in trade, and this was a nonliving body traded for scientific purposes. One live

specimen with the source recorded as unknown was also reported in trade. All other specimens reported in trade were captive-bred or captive-born specimens.

The majority of the specimens of this species reported in international trade (99 percent) are captive-bred or captive-born. Although it is possible that wild parrots could have been taken to establish parental stock for captive breeding or laundered as captive-bred or captive-born specimens, we found no information indicating this is occurring. Furthermore, because the species is listed in Appendix II of CITES, the Management Authority of the Country of Export is required to ensure that the specimens were legally obtained, the export will not be detrimental to the survival of the species in the wild, and issue a CITES export document. The one wild specimen reported in trade was a scientific specimen traded for scientific purposes. Therefore, we believe that international trade controlled via valid CITES permits is not a threat to the species.

Until 2011, most yellow-billed parrot nestlings were poached for the local market and were not highly desirable in the international pet trade (Koenig 2011, pers. comm.; Koenig 2001, p. 206). They are popular on Jamaica as pets because of their colorful plumage and ability to mimic human sounds; the yellow-billed parrot appears to be in higher demand than black-billed parrots because of their brighter coloration (Snyder *et al.* 2000, p. 107; Windsor Research Center n.d., unpaginated). Most poaching operations are small-scale, although larger-scale operations exist (Sylvester 2011, unpaginated). Poachers may use sticks baited with fruit and covered in glue to trap birds (Sylvester 2011, unpaginated). Additionally, poachers will cut down nesting trees to obtain nestlings (BLI 2011a, unpaginated; NEPA 2010b, unpaginated; Koenig 2008, p.

145). In March 2010, Jamaica's National Environment and Planning Agency, the government agency responsible for protecting natural resources, published a news release reminding residents that it is illegal to buy and/or sell Jamaican parrots locally or trade in them internationally (NEPA 2010b, unpaginated). In Cockpit Country, threats to the yellow-billed parrot from collection are ranked as medium (John and Newman 2006, p. 15). However, Jamaica's National Environment and Planning Agency has recently admitted to receiving intelligence regarding a growth in illegal trade of Jamaican wildlife and has noticed an increase in the illegal importation of monkeys, birds, and snakes into the country (Neufville 2012, unpaginated; NEPA 2010a, p. 1). Jamaica is now believed to be a trans-shipment point for illegal trade in animals from Central and South America (NEPA 2010a, p. 1).

As reported by several media outlets, in April 2011, 74 parrot eggs were smuggled out of Jamaica, but were detected at the Eisenstadt Airport in Vienna, Austria. The eggs were confiscated, and falsified documents claiming the parrots were of European origins were found. The seizure was the highest number of smuggled bird eggs in the history of the European Union. The eggs were taken to Vienna's Schönbrunn Zoo, where staff successfully hatched 54 of the 74 eggs. Nine chicks died, but 45 were reared successfully. Of the 45, 24 were yellow-billed parrots. On the international black market, the price for individual parrots range from \$5,300 to \$20,000 U.S. dollars (Neufville 2012, unpaginated; Ferguson 2011, unpaginated; Koenig 2011, pers. comm.; Stefan 2011, pp. 16–17; Vilikovská 2011, unpaginated).

Jamaica's National Environment and Planning Agency issued a press release in 2011 stating that steps were being taken to request the return of the endemic Jamaican parrots

smuggled out of Jamaica in 2011 (Jamaica Observer 2011a, unpaginated). If they are not returned to Jamaica, the Schönbrunn Zoo plans to keep some of the parrots, while giving others to scientific zoos for research purposes. They also plan to develop a captive breeding program for these birds in Europe (Ferguson 2011, unpaginated; Koenig 2011, pers. comm.). We do not know if the purpose of the captive breeding program has been clarified, but if a breeding program is established in Europe without strict controls put in place, it could open an avenue for additional illegally exported birds to be laundered through legal trade (Koenig 2011, pers. comm.). If captive breeding is successful enough to produce enough birds to meet some, but not all, of the commercial demand, legal trade could mask the illegal trade. However, we do note that if a captive breeding program is highly successful such that it meets all of the commercial demand, it could preclude the need for wild-caught birds.

Poaching for use as caged birds places a strong pressure on the population of yellow-billed parrots and is a documented cause of nest failures and reduces the number of parrots in the wild (BLI 2011a, unpaginated; Snyder *et al.* 2000, p. 106). The cutting of trees to obtain parrots destroys nest cavities and reduces the number of available nesting sites for future generations. This has a significant negative impact on the yellow-billed parrot, as this species does not excavate its own holes for nesting but relies on existing holes that often form in old-growth trees (BLI 2011a, unpaginated; Sylvester 2011, unpaginated; NEPA 2010b, unpaginated; Wiley 1991, p. 191). Mining access roads create accessibility to forests, and illegal timber extraction in bauxite mining areas facilitates the poaching of both nestlings and adults, and exacerbates the effects of poaching on nest failures (BLI 2011a, unpaginated; Koenig 2008, p. 136). Although we do not have detailed information on the numbers of yellow-billed parrots taken for the pet

trade, when combined with habitat loss from deforestation, the impact to the survival of this species is severe (Sylvester 2011, unpaginated).

As described under Factor A, parrot habitat is threatened by the conversion of forests to agriculture. As agriculture spreads into parrot habitat, farmers and birds come into conflict over crops (Wiley 1991, p. 191). Some persecution for crop and garden damage, especially citrus, has been reported for the yellow-billed parrot (Snyder *et al.* 2000, p. 107).

Summary of Factor B

Since the CITES Appendix-II listing of the yellow-billed parrot, its legal international commercial trade has been very limited. However, the species appears to be popular in Jamaica's domestic market and has recently been documented in the international black market, contributing to the decline of the species. In addition to removing individuals from the wild population, poachers cut trees to trap nestlings, removing limited essential nesting cavities and reducing the availability of nesting cavities for future generations. Ongoing deforestation in Jamaica may increase the likelihood of birds and farmers coming into conflict and yellow-billed parrots being killed to protect crops. Combined with the ongoing deforestation in Jamaica, the removal of individuals from the population and the further loss of nesting trees due to poaching activities are significant concerns to the survival of this species.

C. Disease or predation.

Disease

Nonnative psittacines imported for the pet trade pose a high threat to the yellow-billed parrot through the introduction of disease, the potential for hybridization, and competitive exclusion of nesting activities (see also Factor E discussion, below) (Koenig 2009, p. 2; Levy and Koenig 2009, p. 264; Wiley 1991, p. 191). In 2006, a temporary ban on importation of nonnative parrot species was put in place based on concerns for the introduction of highly pathogenic strains of avian influenza (Koenig 2009, p. 3; Levy and Koenig 2009, p. 264). At that time, threats from introduced diseases in Cockpit Country were ranked low (John and Newman 2006, p. 15).

Currently, the ban on importation of nonnative parrot species is no longer in effect (Koenig 2011, pers. comm.), leaving the yellow-billed parrot vulnerable to disease transmission from escaped nonnative psittacines imported for the pet industry (Koenig 2009, p. 1). A wide variety of psittacines, including budgerigars (*Melopsittacus undulatus*), cockatiels (*Nymphicus hollandicus*), and various species of lovebirds (*Agapornis* spp.) have been legally imported and likely smuggled illegally into Jamaica. Several species of parrots are known to have escaped their cages and have been observed in urban areas (Koenig 2009, pp. 1–2). The movement of psittacines and other bird species for the pet trade has facilitated the spread of many diseases. Asymptomatic hosts with more developed immune systems can shed viruses and bacteria that can be highly lethal for species that have not encountered those microorganisms; island species are particularly vulnerable due to their isolation (Koenig 2009, p. 2).

Diseases that are of particular concern for psittacines include avian influenza, psittacine beak and feather disease, polyomavirus, Pacheco's disease, avian tuberculosis, and proventricular dilatation disease (Koenig 2009, pp. 2–3).

Avian influenza is an infection caused by flu viruses, which occur in birds worldwide, especially waterfowl and shorebirds. Most strains of the avian influenza virus have low pathogenicity and cause few clinical signs in infected birds, but are highly contagious among birds (CDC 2010, 2005, unpaginated). Pathogenicity is the ability of a pathogen to produce an infectious disease in an organism. However, strains can mutate into highly pathogenic forms, which is what happened in 1997, when the highly pathogenic avian influenza virus (called H5N1) first appeared in Hong Kong (USDA *et al.* 2006, pp. 1–2). Signs of low pathogenic avian influenza include decreased food consumption, coughing and sneezing, and decreased egg production. Birds infected with highly pathogenic influenza may exhibit these same symptoms plus a lack of energy, soft-shelled eggs, swelling, purple discoloration, nasal discharge, lack of coordination, diarrhea, or sudden death (USDA 2007, unpaginated). Most of the information regarding avian influenza is on domesticated bird species, especially poultry. We do not have information on the extent that introduced parrot species and the spread of avian influenza have impacted the yellow-billed parrot.

Psittacine beak and feather disease (PBFD) is a common viral disease that has been documented in more than 60 psittacine species, but all psittacines should be regarded as potentially susceptible (Rahaus *et al.* 2008, p. 53; Abramson *et al.* 1995, p. 296). The causative agent is a virus belonging to the genus *Circovirus* (Koenig 2009, p. 2; Rahaus *et al.* 2008, p. 53).

This viral disease affects both wild and captive birds, causing chronic infections resulting in either feather loss or deformities of the beak and feathers (Koenig 2009, p. 2; Rahaus *et al.* 2008, p. 53; Cameron 2007, p. 82). PBFD causes immunodeficiency and affects organs such as the liver and brain, and the immune system. Suppression of the immune system can result in secondary infections due to other viruses, bacteria, or fungi. The disease can be carried by psittacines, such as cockatiels, lovebirds, and budgerigars, without obvious signs (Koenig 2009, p. 2; de Kloet and de Kloet 2004, p. 2,394). Birds usually become infected in the nest by ingesting or inhaling viral particles. Infected birds develop immunity, die within a couple of weeks, or become chronically infected. No vaccine exists to immunize populations (Cameron 2007, p. 82).

Avian polyomavirus (APV) is one of the most significant viral pathogens of caged birds (Pesaro *et al.* 2005, p. 321). This virus is lethal to juvenile parrots and can be carried asymptotically by cockatiels and budgerigars (Koenig 2009, p. 2). The mortality peak in some Psittacine species occurs between 4 and 8 weeks of age (Pesaro *et al.* 2005 pp. 321, 325). Most birds infected with APV are mildly affected (Gonzalez *et al.* n. d., p. 2).

Pacheco's parrot disease is a systemic disease caused by a psittacid herpesvirus (PsHV-1) (Tomaszewski *et al.* 2006, p. 536; Abramson *et al.* 1995, p. 293; Panigrahy and Grumbles 1984, pp. 808, 811). It is an acute, rapidly fatal disease of parrots, and sudden death is sometimes the only sign of the disease; however, in some cases, birds may show symptoms and may recover to become carriers, shedding the virus in its droppings, and some may show no signs of the disease,

but shed the active virus for a considerable length of time (Koenig 2009, pp. 2–3; Tomaszewski *et al.* 2006, p. 536; Abramson *et al.* 1995, p. 293; Panigrahy and Grumbles 1984, p. 811). If clinical signs of Pacheco’s disease are exhibited, they may include anorexia, depression, regurgitation, diarrhea, nasal discharge, central nervous system signs, and conjunctivitis (Abramson *et al.* 1995, p. 293; Panigrahy and Grumbles 1984, pp. 809–810). Death may occur 8 hours to 6 days after the onset of signs (Panigrahy and Grumbles 1984, p. 810). The outcome of the infection depends upon which of the four genotypes of PsHV-1 the individual is infected with, the species infected, and other unknown factors. For example, only genotype 4 is known to cause mortality in macaws (Tomaszewski *et al.* 2006, p. 536). Outbreaks of Pacheco’s disease have resulted in massive die-offs of captive parrots, and this disease is known to have caused high mortality in endangered species of parrots in the United States (Tomaszewski *et al.* 2006, p. 536; Panigrahy and Grumbles 1984, p. 808).

Avian tuberculosis (also known as avian mycobacteriosis) is caused by the bacillus bacteria *Mycobacterium avium* and is rapidly spread by fecal contaminations of perches, feed, or water sources and can remain viable in soil for years (Koenig 2009, p. 3; USGS 1999, p. 96; Butcher *et al.* 1990, p. 1025; Roszkopf *et al.* 1986, p. 219; Panigrahy *et al.* 1983, p. 1166). There are 20 types of *M. avium*. This disease causes chronic wasting characterized by weight loss, diarrhea, difficulty breathing, and tumors of the skin and eyes (Butcher *et al.* 1990, p. 1023; USGS 1999, Chapter 8, pp. 93–97). Tumors may also affect the spleen, liver, lungs, air sacs, skin, and bone marrow. It is spread through inhalation, direct contact with infected birds, and ingestion of contaminated food or water.

Proventricular dilatation disease (PDD), also known as avian bornavirus (ABV) or macaw wasting disease, is a fatal disease that poses a serious threat to all domesticated and wild parrots worldwide, particularly those with very small populations (Kistler *et al.* 2008, p. 1; Abramson *et al.* 1995, p. 288). This contagious disease causes damage to the nerves of the upper digestive tract, so that food digestion and absorption are negatively affected. The disease has a 100-percent mortality rate in affected birds, although the exact manner of transmission between birds is unclear (Kistler *et al.* 2008, p. 1).

The extent to which these diseases occur in wild populations is unclear. However, given the resumption of importation of parrot species into Jamaica, rates of false negatives in testing of diseases, the inability to detect asymptomatic carriers when viruses are dormant and the host is not shedding live virus, known occurrences of escaped nonnative parrot species, and the vulnerability of island species to foreign microorganisms, it appears that the yellow-billed parrot may be at risk of disease transmission from nonnative parrot species imported into Jamaica (Koenig 2011, pers. comm.). Additionally, in 2011, Jamaica's National Environment and Planning Agency issued a press release stating that steps were being taken to request the return of the endemic Jamaican parrots smuggled out of Jamaica in 2011 (Jamaica Observer 2011a, unpaginated). Since being confiscated, the parrots have been housed at the Schönbrunn Zoo; if these parrots have not been maintained under strict quarantine conditions, they also present a disease risk if repatriated to Jamaica (Koenig 2011, pers. comm.).

Predation

The Jamaican boa, or yellow boa (*Epicrates subflavus*), is the only native predator to be of potential consequence for roosting parrots (Koenig 2008, p. 144). The yellow boa is also an endemic species listed as vulnerable by Jamaica. Edge habitats appear to provide an optimal habitat for the boa due to the proximity to human settlements and the subsequent increased number of pests, such as rats (Tole 2006, p. 799). Also, edge habitats are exposed to more sunlight than the interior forest; this exposure likely results in an increase in the abundance of vines, which enhance connectivity between neighboring trees and facilitate the movement of boas (Koenig *et al.* 2007, p. 86). Habitat loss has contributed to the decline and isolation of yellow boas, although they are common in Cockpit Country, and nestling parrots represent one important prey item (Koenig *et al.* 2007, p. 87; Koenig 2001, p. 221). Although yellow-billed parrots appear to prefer interior forests and are less common in edge habitat than the black-billed parrot, there is direct evidence of yellow boas preying on yellow-billed parrot nestlings and predation by yellow boas has been identified as a major cause of the species' dwindling numbers (Koenig *et al.* 2007, p. 82; Tole 2006, p. 799; Koenig 2001, p. 217; Koenig 1999, p. 10). As deforestation continues and more edge habitat is created (see Factor A discussion, above), the yellow-billed parrot may become more vulnerable to predation by boas. Any decline in recruitment due to predation of nestlings will have a negative impact on the ability of the yellow-billed parrot population to stabilize or increase.

Red-tailed hawks (*Buteo jamaicensis*) are another important predator of fledgling and juvenile parrots. They occur in low densities across the closed canopy of Cockpit Country; however, they are commonly observed in peripheral habitat. Mining in Cockpit Country would

create additional suitable habitat for these birds and increase the risk of predation on parrots (Koenig 2008, p. 144).

Summary of Factor C

Imported, nonnative psittacines were identified as a high threat to the yellow-billed parrot, in part, due to concerns for the introduction of highly pathogenic strains of avian influenza. Although we have no information that the yellow-billed parrot has been impacted by disease at a level which may affect the status of the species as a whole, the risk of disease transmission is now elevated, given the termination of the ban on importation of nonnative parrot species, past occurrences of escaped parrots, uncertainties in disease detection, the declining population of yellow-billed parrots in Jamaica, and the declining extent and quality of habitat. Because the yellow-billed parrot is an island endemic species, it may be particularly vulnerable to the effects of introduced diseases.

There is direct evidence of boas preying on yellow-billed parrot nestlings. Edge habitat provides an optimal habitat for the yellow boa. As primary forests diminish and edge habitat increases, predation by boas on parrots may also increase. We do not have any information on actual predation by red-tailed hawks on the yellow-billed parrot. However, if mining occurs in Cockpit Country, habitat may be altered to conditions suitable for the hawk and increase the risk of predation.

D. Inadequacy of existing regulatory mechanisms.

National Laws

The yellow-billed parrot is listed under the Second Schedule of Jamaica's Endangered Species (Protection, Conservation and Regulation of Trade) Act (JESA). The Second Schedule includes those species that could become extinct or which have to be effectively controlled (JESA 2000, pp. 72, 80). It is illegal to buy and/or sell Jamaican parrots locally or trade them internationally (NEPA 2010b, unpaginated; JESA 2000, p. 14; Snyder *et al.* 2000, p. 107; Wiley 1991, p. 202). CITES permits or certificates are required to import animals under JESA (Williams-Raynor 2010, unpaginated). Offenses can result in a fine of 2,000,000 Jamaican dollars (approximately \$23,500 U.S. dollars), imprisonment up to 2 years, or both. If convicted in a Circuit Court, the offender is subject to a fine, prison term up to 10 years, or both (JESA 2000, p. 39).

Parrots have full protection under section six of the Jamaican Wildlife Protection Act (1974) (WPA) (Wiley 1991, p. 202). The WPA was originally passed in 1945, to regulate sport hunting and fishing, but since that time has undergone changes to address protection of animals. It does not, however, address habitat protection or the conservation of flora (Levy and Koenig 2009, p. 263). Possession is regulated by the WPA (Koenig 1999, p. 10). Under this Act, it is illegal for any person to hunt or possess a protected bird, including the yellow-billed parrot; to take the nest or egg of any protected bird; or to have in possession the nest or egg of any protected bird (WPA 1945, pp. 4–5). Under section 20 of the legislation, anyone found in possession of a live Jamaican parrot or any of its parts can face a maximum fine of 100,000 Jamaican dollars (\$1,200 U.S. dollars) or 12 months in prison (WPA 1945, p. 11). However,

finest levied are often much less. For example, one offender was charged a fine of only 5,000 Jamaican dollars (\$55 U.S. dollars) (Sylvester 2011, unpaginated).

As described above under Factor B, the poaching of adult and nestling yellow-billed parrots for the local pet bird trade has contributed to the decline of the species and remains a threat. Additionally, the yellow-billed parrot has recently been documented in the international black market, further contributing to the decline of the species. Therefore, the JESA and WPA do not appear to adequately protect this species.

Forestry Acts of 1937 and 1973 provide certain protections to some habitat (e.g., Cockpit Country Forestry Reserve), and other areas have been established as sanctuaries (Snyder *et al.* 2000, p. 107; Wiley 1991, p. 202). There are more than 150 forest reserves, which provide for the preservation of forests, watershed protection, and ecotourism (Levy and Koenig 2009, p. 263). After Hurricane Gilbert in 1988, a new Forest Act (1996) was implemented. This Forest Act provides for the conservation and sustainable management of forests and covers such activities as protection of the forest for ecosystem services and biodiversity (Levy and Koenig 2009, p. 263). The Forest Act provides for the declaration of forest reserves and forest management areas for purposes such as conservation of natural forests, development of forest resources, generation of forest products, conservation of soil and water resources, and protection of flora and fauna. The lease of any parcel of land in a forest reserve is also regulated. Management plans are required every 5 years, and they include a determination of an allowable annual cut, forest plantations to be established, a conservation and protection program, and portions of the land to be leased and for what purposes. Clearing of land for cultivation, cattle

grazing, and the burning of vegetation are regulated. Permits are also required for harvesting of timber on Crown land, the processing of timber, or sale of timber; no person may cut a tree in a forest reserve without a license. As described above under Factor A, deforestation is the main threat to Jamaica's forests. Forests originally covered 97 percent of the island; they now cover only 30 percent. The remaining forests continue to be threatened by deforestation from logging, agriculture, and mining; therefore, it appears that this regulatory mechanism does not adequately protect the forest resources of Jamaica.

Under Jamaica's Natural Resources Conservation Authority Act, an environmental permit is required for the first-time introduction of species of flora and fauna and genetic material (Williams-Raynor 2010, unpaginated). Mining is also regulated by this act. Before any physical development or construction can take place, a permit must be obtained from the Natural Resources Conservation Authority (NRCA). If the activity is likely to be harmful to public health or natural resources, NRCA can refuse a permit or order the immediate cessation of the activity or even closure of the plant (Berglund and Johansson 2004, p. 8). The Natural Resources Conservation Authority Act also addresses habitat protection by providing a framework for a system of protected areas, such as the Blue and John Crow Mountains National Park (Levy and Koenig 2009, p. 263). We do not have information to completely analyze the adequacy of this regulatory mechanism. Due to the ongoing threats to Jamaica's forest resources, it appears that this regulatory mechanism may not be adequate to ameliorate those threats.

Under the Mining Act (1947), bauxite deposits are owned by the Jamaican Government, not by the owner of the land. The government may issue licenses to anyone to explore the land or mining leases to exploit it; therefore, in order to prospect and search for minerals, companies do not need to purchase the land. The Mining Act gives the lessee or the license holder the right to enter government land or privately owned land to search for minerals or to mine minerals. Compensation is payable to the landowner for damages to land and property. The Mining Act also stipulates that the mining companies must restore every mined area of land to the level of productivity that existed prior to the mining. Restoration must take place within 6 months following the end of mining activity. Failure to do so results in a penalty of \$4,500 U.S. dollars per acre. The average cost for mined-out bauxite restoration is \$4,000 U.S. dollars per acre; therefore, companies are more encouraged to restore. According to the Jamaican Bauxite Institute (the government agency responsible for monitoring the bauxite industry), it is unusual for companies to not take actions to restore (Berglund and Johansson 2004, p. 7). However, there are reports that penalties for failing to meet reclamation requirements are rarely enforced. Furthermore, when restoration is done, it is often planted with nonnative grasses and is not the same habitat that existed before mining (see “Bauxite Mining” section under Factor A discussion, above) (BLI 2011c, unpaginated; Koenig 2008, p. 141; BLI 2006, unpaginated). Given the resulting habitat following bauxite mining on Mount Diablo, it appears that this regulatory mechanism is not adequate to ameliorate threats to the forest resources of Jamaica.

An import permit is also required from Jamaica’s Veterinary Services Division under the Animal Disease and Importation Act (Williams-Raynor 2010, unpaginated). Additionally, no caged bird may be imported into Jamaica from Trinidad and Tobago or any country of South

America. However, Jamaica's importation and quarantine regulations are focused on protecting human health, agriculture, and commercial interests, rather than wildlife (Koenig 2011, pers. comm.). Based on an increase in illegal importation of animals into Jamaica (see Factor E discussion, below), it appears that this law may not adequately protect the yellow-billed parrots from potential disease, hybridization, or competition with nonnative species.

There are at least 34 pieces of Jamaican legislation that refer to the environment. However, there are problems with conservation in Jamaica that stem from poor communication between various government institutions, regulations insufficient at recognizing the value of biodiversity, insufficient funding, poor enforcement, and incomplete and improper environmental impact assessments (Levy and Koenig 2009, p. 263). In fact, due to the limitations of the Forestry Department and NRCA, management of the first national park was delegated to a nongovernmental organization, Jamaica Conservation and Development Trust (JCDDT) (Levy and Koenig 2009, p. 263). The Forestry Department currently manages the entire Cockpit Country region as a forest reserve; however, they lack adequate technical and enforcement staff to respond to the increasing deforestation problem (Tole 2006, p. 799).

Policies have led to a greater awareness of the legal status of parrots; however, they continue to be illegally harvested for local and international trade (Snyder *et al.* 2000, p. 107). A stricter policy on poaching of nests is needed (Snyder *et al.* 2000, p. 107; Wiley 1991, p. 202). At a meeting in February 2010, Jamaica's National Environment and Planning Agency, along with others, decided to take actions to cut down on trade. These actions include a public awareness program, increased monitoring of ports and territorial waters, adding pet stores in the

Natural Resources Conservation Authority's permit and license system, and publicizing information on seizures and confiscations; to date the agency has undertaken the awareness campaign (Williams-Raynor 2010, unpaginated).

Protected Areas

Habitat in the Blue and John Crow Mountains was declared a national park in 1989, and is managed by the Jamaica Conservation and Development Trust, a local nongovernmental organization (NGO) (BLI 2011d, unpaginated; BLI 2011e, unpaginated; Dunkley and Barrett 2001, p. 1; Snyder *et al.* 2000, p. 107; Wiley 1991, p. 202). It protects one third of the approximately 30 percent of Jamaica that remains forested (TNC 2008b, unpaginated). The purpose of this national park is to ensure long-term conservation of biodiversity, ecosystem services, and other cultural heritage. The main conservation objective is to maintain and enhance the remaining area of closed broadleaf forest and the flora and fauna within it. The park is guided by a 5-year management plan (IUCN 2011, unpaginated).

Enforcement and management of the national park are weak. Laws that prohibit forest clearance inside National Parks are largely not enforced as park rangers fear reprisals from farmers (Chai *et al.* 2009, pp. 2489, 2491). One study found that even after designation as a protected area, the Blue and John Crow Mountains National Park continued to experience forest clearance and fragmentation, resulting in an increasing number of smaller, more vulnerable fragments, species shifts, and loss in biodiversity. However, forest regrowth increased, resulting in a 63 percent decline in deforestation (Chai *et al.* 2009, pp. 2487-2488, 2489). Because this

park is managed by an NGO, funding is a continuing problem and restricts actions (BLI 2011d, unpaginated).

Fifteen important bird areas (IBAs) cover approximately 3,113 km² (1,202 mi²), or 25 percent, of Jamaica's land area. The yellow-billed parrot is listed as occurring in 10 of these IBAs, although population estimates are not available for most. IBAs are international site priorities for bird conservation. These areas may overlap with forest reserves or Crown lands that offer protection, but designation as an IBA itself does not afford any protection to the area. In Jamaica, 44 percent of the area covered by IBAs is under formal protection, but active management is minimal in many areas (Levy and Koenig 2009, p. 265).

International Laws

The yellow-billed parrot is listed in Appendix II of CITES. CITES is an international treaty among 175 nations, including Jamaica and the United States, which entered into force in 1975. In the United States, CITES is implemented through the U.S. Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). The Act designates the Secretary of the Interior as lead responsibility to implement CITES on behalf of the United States, with the functions of the Management and Scientific Authorities to be carried out by the Service. Under this treaty, member countries work together to ensure that international trade in animal and plant species is not detrimental to the survival of wild populations by regulating the import, export, and reexport of CITES-listed animal and plant species.

Through Resolution Conf. 8.4 (Rev. CoP15), the Parties to CITES adopted a process, termed the National Legislation Project, to evaluate whether Parties have adequate domestic legislation to successfully implement the Treaty (CITES 2010b, pp. 1–5). In reviewing a country’s national legislation, the CITES Secretariat evaluates factors such as whether a Party's domestic laws designate the responsible Scientific and Management Authorities, prohibit trade contrary to the requirements of the Convention, have penalty provisions in place for illegal trade, and provide for seizure of specimens that are illegally traded or possessed. The Government of Jamaica was determined to be in Category 1, which means they meet all the requirements to implement CITES (<http://www.cites.org>, SC59 Document 11, Annex p. 1).

As discussed above under Factor B, we do not consider international trade controlled via valid CITES permits to be a threat impacting this species. Therefore, protection under this Treaty against unsustainable international trade is an adequate regulatory mechanism.

The import of yellow-billed parrots into the United States is also regulated by the Wild Bird Conservation Act (WBCA) (16 U.S.C. 4901 *et seq.*), which was enacted on October 23, 1992. The purpose of the WBCA is to promote the conservation of exotic birds by ensuring that imports to the United States of exotic birds are biologically sustainable and not detrimental to the species. The WBCA generally restricts the importation of most CITES-listed live and dead exotic birds except for certain limited purposes such as zoological display or cooperative breeding programs. Import of dead specimens is allowed for scientific specimens and museum specimens. The Service may approve cooperative breeding programs and subsequently issue import permits under such programs. Wild-caught birds may be imported into the United States

if certain standards are met and they are subject to a management plan that provides for sustainable use. At this time, the yellow-billed parrot is not part of a Service-approved cooperative breeding program and has not been approved for importation of wild-caught birds.

International trade of parrots was significantly reduced during the 1990s, as a result of tighter enforcement of CITES regulations, stricter measures under European Union legislation, and adoption of the WBCA, along with adoption of national legislation in various countries (Snyder *et al.* 2000, p. 99). As discussed above under Factor B, we found that legal commercial international trade has been very limited, and we do not consider international trade controlled via valid CITES permits to be a threat impacting this species. However, yellow-billed parrots are taken for the local Jamaican market and have recently been documented in illegal international trade. We believe that regulations are not adequately enforced to ameliorate threats from poaching for Jamaica's domestic pet bird trade or illegal international trade.

Summary of Factor D

Although there are laws intended to protect the forests of Jamaica and the yellow-billed parrot, these laws are not adequate to ameliorate: Impacts to the habitat of the yellow-billed parrot from deforestation via mining, logging, and agriculture, even within protected areas such as the Blue and John Crow Mountains National Park; the risk of disease transmission; predation, which is exacerbated by habitat alteration; and poaching for the local and international pet bird market.

E. Other natural or manmade factors affecting the species' continued existence.

Hurricanes

Hurricanes are a constant threat to island populations of wildlife and are a frequent occurrence in the Caribbean (Wiley and Wunderle 1993, p. 320). In 1988, Hurricane Gilbert hit Jamaica and caused widespread damage to the island's mid-level and montane forests; Cockpit Country, Blue Mountains, and John Crow Mountains all suffered severe and very extensive damage (Varty 1991, pp. 135, 138). Since 2004, Jamaica has been hit by five major storms, including two hurricanes and three tropical storms (Thompson 2011, unpaginated). Global climate change models predict increased hurricane frequency and intensity for the Caribbean (Koenig 2011, pers. comm.; Koenig 2009, p. 1). The most vulnerable birds are frugivorous and birds that require large trees for foraging or nesting; require a closed canopy forest; have special microclimate requirements; or live in a habitat in which vegetation is slow to recover, like the yellow-billed parrot (Wiley and Wunderle 1992, pp. 319, 337). Survival of small populations within a fragmented habitat becomes more uncertain if the destructive potential of catastrophic events increases, as predicted for hurricanes with increased climate change (Wiley and Wunderle 1993, p. 319).

Frequent hurricanes can have direct and indirect effects on bird populations. Direct effects include mortality from winds, rain, and storm surges, and geographic displacement of individuals by the wind. Wet plumage may cause hypothermia and death in birds, with chicks being at greater risk than adults. Additionally, birds may be killed by falling trees or flying debris, birds may be thrown against objects, or high winds may blow them out to sea where they die from exhaustion and drowning (Wiley and Wunderle 1993, pp. 319, 321–322). However, the

greatest impacts to birds are the indirect effects that come after the storm has passed and stem from the destruction of vegetation. These effects include loss of food sources, loss of nests and nesting sites, increased vulnerability to predation, microclimate changes, and increased conflict with humans (Wiley and Wunderle 1993, pp. 319, 321, 326, 337; Varty 1991, p. 148).

Defoliation is the most common type of damage caused by hurricanes. High winds remove flowers, fruit, and seeds, impacting frugivores, like the yellow-billed parrot, the greatest. Larger trees, which are typically the best producers, are most affected by hurricanes. Certain sections of Jamaica following Hurricane Gilbert regenerated quickly, while the destruction in some areas was so complete it was estimated to take many years to recover. The majority of trees and shrubs were reported to have been mostly or totally defoliated; trees in flower or fruit lost their blooms (Varty 1991, pp. 139, 148). In some cases, the production of flowers and fruits are less than 50 percent of pre-hurricane levels after 1 year (Wiley and Wunderle 1993, pp. 324–325). Seven months after Hurricane Gilbert, some areas had little or no apparent regrowth; although most trees showed signs of refoilation, and after 10 months, some trees began to show signs of growth (Varty 1991, pp. 140–141). For frugivores, food supplies are likely to be reduced for several years following a destructive hurricane, and with limited resources, birds may experience greater competition for food, leading to a decline in populations (Wiley and Wunderle 1993, p. 332; Varty 1991, pp. 144, 148).

Nesting sites can also be damaged by high winds, rain, or flooding. The larger, taller trees, like those needed by the yellow-billed parrot for nesting activities, are the most susceptible to snapping or uprooting (Wiley and Wunderle 1993, p. 327). During Hurricane Gilbert, many

trees were toppled or had crowns or major limbs broken or snapped off. Others were damaged or knocked over by other windfall trees. In some places, landslides totally destroyed the forests (Varty 1991, p. 139). The loss of these nesting trees further reduces the already limited nesting cavities available. Damaged trees that remain standing are more likely to be lost in future storms, increasing the risk to yellow-billed parrots using them. However, trees that suffer limb breakage but remain standing may create additional cavities for nesting (Wiley and Wunderle 1993, pp. 326–328). With the loss of suitable nesting sites, reproductive responses may vary following a storm. Hurricane Gilbert severely damaged or blew over 50 percent and 44 percent of the larger trees in John Crow Mountains and Cockpit Country, respectively; however, some yellow-billed parrots were observed successfully breeding in Cockpit Country within 10 months of the storm (Wiley and Wunderle 1993, p. 335; Varty 1991, pp. 143, 149).

Defoliated habitat may increase the risk of yellow-billed parrots to predators, including humans. For example, because of competition for limited food resources, forest dwellers may be forced to forage closer to the ground or wander more widely, exposing them to predators. Birds may be weakened after a storm and serve as an easy source of protein for predators and humans in need of food. Additionally, while in search of food and cover, birds may come into conflict with humans in agricultural regions, making them more vulnerable to poaching; farmers may shoot birds to protect any remaining crops (Wiley and Wunderle 1993, pp. 330–332). Hurricanes also create additional edge habitat by increasing the number and size of forest openings; this may enable predators to invade forest tracts they would otherwise avoid (Wiley and Wunderle 1993, p. 336).

Furthermore, where trees have been blown down, subsistence farmers may move in to exploit the land. Governments may also make subsidies available for timber removal and development of the land, including the use of chainsaws and heavy equipment to clear away debris and dead trees. The equipment may not be recalled following cleanup and may be used to clear healthy forests (Wiley and Wunderle 1993, p. 331). Following Hurricane Gilbert, chainsaws brought in for cleanup were later used to clear forests for timber (Varty 1991, p. 146). Additionally, farmers lost most or all of their cultivated land, increasing the demand for new land and, therefore, resulting in additional deforestation (Varty 1991, p. 145).

Hurricanes are a natural occurrence in the Caribbean, and birds have adapted to periodic storms. Parrots should be able to adapt to changes following hurricanes, and healthy, wide-ranging populations should be able to, in the long term, survive hurricanes. However, hurricanes play a more important role in extinction when a species already has a restricted and fragmented range due to habitat loss and is reduced to fewer individuals (Wiley and Wunderle 1993, pp. 340–341; Varty 1991, p. 149; Wiley 1991, p. 191). After a population has declined due to deforestation activities, they may not be able to recover from the additional loss of forests from hurricanes (Varty 1991, p. 149). The yellow-billed parrot population has survived through hurricanes, but long-term survival is a concern, given the additional impact of hurricanes on food and nesting sources, combined with the continuing habitat destruction by humans (Wiley 1991, p. 203). If the large, contiguous forests of Cockpit Country remain intact, the yellow-billed parrot is predicted to be able to adapt to predicted hurricane frequency and intensity. However, if the forests are severely fragmented and dominated by edge habitats, reproductive performance

is predicted to decrease, leading to population loss, and hurricanes to hasten the species' extinction (Koenig 2011, pers. comm.; Koenig 2009, pp. 1–2).

Competition with Nonnative Species

A temporary ban was placed on the importation of nonnative psittacines due to potential introduction of disease, hybridization, and competition with the two native parrot species. However, the ban is no longer in effect (Koenig 2011, pers. comm.), leaving the yellow-billed parrot vulnerable to hybridization and competitive exclusion with escaped nonnative psittacines imported for the pet industry (Koenig 2009, p. 1). Jamaica's National Environment and Planning Agency has noticed an increase in the illegal importation of monkeys, birds, and snakes into the country. Jamaica is now believed to be a trans-shipment point for illegal trade in animals from Central and South America (NEPA 2010a, p. 1). Nonnative species not only introduce diseases to native wildlife (see Factor C discussion, above), but escaped individuals also pose a threat through hybridization and competition for food and nesting sources (Levy and Koenig 2009, p. 264; Wiley 1991, p. 191).

In 2007, a yellow-naped Amazon (*Amazona auropalliata*) was observed flying freely in the area of yellow-billed parrots and, more importantly, was observed forming a pair-bond with a yellow-billed parrot. It was determined that the Amazon parrot must have been a captive bird that had escaped, rather than a situation of natural colonization. As the yellow-billed parrot and the yellow-naped Amazon belong to the same genus, the potential for hybridization is high (Koenig 2009, p. 2). In the long term, should a small population of other Amazon species, like the yellow-naped Amazon, become established, hybridization could compromise the unique

genetic makeup of the yellow-billed parrot. Additionally, mainland Amazon species, like the yellow-naped Amazon, are significantly larger and heavier than Jamaican parrots; it is likely that these nonnatives would dominate the yellow-billed parrot and exclude them from nest sites (Koenig 2009, p. 2).

Summary of Factor E

Hurricanes frequently occur in the Caribbean. Healthy, widespread populations of birds should be able to adapt to changes following a hurricane. However, species like the yellow-billed parrot, which are frugivores and rely on cavities in old growth trees, are particularly vulnerable to the impacts of hurricanes on forests. Food sources may be reduced for years following a storm, and already limited nesting cavities may be further reduced; declines in these vital resources could result in competition with other species and a decline in the population. These impacts are further exacerbated due to deforestation activities that have already caused a decline in the extent and quality of yellow-billed parrot habitat and declines in the yellow-billed parrot population. Because of the ongoing loss of habitat, yellow-billed parrots may not be able to recover from the impacts of a destructive hurricane.

Although we have no information that the yellow-billed parrot has been impacted by hybridization or competition with nonnative parrot species, the risk of these occurrences is elevated given the termination of the ban on importation of nonnative parrot species, past occurrences of escaped parrots, the observed increase in the illegal importation of birds, the larger size of nonnative parrots, the declining population of yellow-billed parrots in Jamaica, and the declining extent and quality of habitat.

Finding

As required by the Act, we conducted a review of the status of the species and considered the five factors in assessing whether the yellow-billed parrot is endangered or threatened throughout all or a significant portion of its range. We examined the best scientific and commercial information available regarding the past, present, and future threats faced by the yellow-billed parrot. We reviewed the petition, information available in our files, and other available published and unpublished information.

The yellow-billed parrot is only found on the island of Jamaica and occurs in fragments across its range; at least 80 percent of the yellow-billed parrot population occurs in one area of the island. The entire population of this species is reported as declining, and the extent and quality of habitat is also declining. This species faces immediate and significant threats, primarily from deforestation through logging, conversion of land to agriculture, road construction, and mining and the subsequent encroachment of nonnative species. Ongoing deforestation activities threaten to remove more of the limited mature trees the yellow-billed parrot needs for nesting. Cockpit Country is also threatened by potential future mining. If mining were to occur, the damage would be irreversible. Additionally, habitat alteration creates an optimal habitat for the yellow boa, which has already been reported to prey on yellow-billed parrot nestlings; continuing deforestation increases this risk of predation. Adults and nestling yellow-billed parrots are captured for the local and international pet bird trade. Poaching of birds for the pet trade removes vital individuals from the population and essential nesting cavities.

The risk of disease transmission and competition with nonnative parrot species is elevated now that the temporary ban on the importation of nonnative psittacine species has been lifted. There are regulatory mechanisms in place to protect the yellow-billed parrot and its habitat, but enforcement appears to be inadequate given the threats this species is currently facing. Hurricanes also pose a threat to the yellow-billed parrot because of the already ongoing deforestation and population decline. This species, in the long term, may not be able to recover from the additional impacts of hurricanes on foraging and nesting resources given the continuing loss of food and nesting resources by logging, agriculture, road development, and mining.

Section 3 of the Act defines an “endangered species” as “any species which is in danger of extinction throughout all or a significant portion of its range,” and a “threatened species” as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The magnitude of the threats the yellow-billed parrot is facing is high. Nesting success is reported to be low for this species. Given the declining population, limited habitat and range, the ongoing and future threats to the remaining habitat, the associated increased risk of predation, and the loss of individuals from poaching, long-term survival of this species is a concern. Impacts from hurricanes are likely to be exacerbated by the ongoing deforestation and declining population. Any loss of individuals from the population or loss of vital nesting cavities from current or future threats further reduces the population and loss of already limited habitat and is likely to affect the reproductive success of this species. Because the population of this species is estimated at 10,000 to 20,000 individuals and mining is not currently occurring in Cockpit Country, we do not believe that this species is currently in danger of extinction. However, given the ongoing deforestation of remaining

suitable habitat for the yellow-billed parrot in Jamaica, the loss of individuals through poaching for the pet bird trade or predation, the exacerbated impacts of hurricanes, and no information to suggest that these threats will be ameliorated, we believe the species will continue to decline and fecundity and recruitment affected such that the species is at risk of extinction in the foreseeable future. Furthermore, given the value of bauxite to Jamaica, the amount of bauxite deposits in Cockpit Country (a stronghold for the species), that mining companies have already drilled for samples in the area, and the lack of an official policy against mining in the area, we believe that mining could occur in Cockpit Country in the foreseeable future with irreversible impacts to remaining suitable habitat and the yellow-billed parrot. Based on current threats and the impacts to the yellow-billed parrot and the potential impacts of future threats, we believe the species will continue to decline and will likely become in danger of extinction in the foreseeable future. Therefore on the basis of the best scientific and commercial information, we find that the yellow-billed parrot meets the definition of a “threatened” species under the Act, and we are listing the yellow-billed parrot as threatened throughout its range.

Significant Portion of the Range

Having determined that the yellow-billed parrot meets the definition of threatened throughout its range, we must next consider whether the yellow-billed parrot is in danger of extinction within a significant portion of its range.

The Act defines an endangered species as one “in danger of extinction throughout all or a significant portion of its range,” and a threatened species as one “likely to become an endangered

species within the foreseeable future throughout all or a significant portion of its range.” The term “significant portion of its range” is not defined by the statute. For the purposes of this finding, a portion of a species’ range is “significant” if it is part of the current range of the species and it provides a crucial contribution to the representation, resiliency, or redundancy of the species. For the contribution to be crucial it must be at a level such that, without that portion, the species would be in danger of extinction.

In determining whether a species is endangered or threatened in a significant portion of its range, we first identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and endangered or threatened. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that: (1) The portions may be significant, and (2) the species may be in danger of extinction there or likely to become so within the foreseeable future. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the species’ range that clearly would not meet the biologically based definition of “significant” (*i.e.*, the loss of that portion clearly would not reasonably be expected to increase the vulnerability to extinction of the entire species to the point that the species would then be in danger of extinction), such portions will not warrant further consideration.

If we identify portions that warrant further consideration, we then determine their status (*i.e.*, whether in fact the species is endangered or threatened in a significant portion of its range). Depending on the biology of the species, its range, and the threats it faces, it might be more efficient for us to address either the “significant” question first, or the status question first. Thus, if we determine that a portion of the range is not “significant,” we do not need to determine whether the species is endangered or threatened there; if we determine that the species is not endangered or threatened in a portion of its range, we do not need to determine if that portion is “significant.”

Applying the process described above for determining whether this species is endangered in a significant portion of its range, we considered status first to determine if any threats or future threats acting individually or collectively endanger the species in a portion of its range. We have analyzed the threats to the degree possible, and determined they are essentially uniform throughout the species’ range and no portion is being impacted to a significant degree more than any other such that the species is currently endangered in any portion of its range.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and encourages and results in conservation actions by Federal and State governments, private agencies and interest groups, and individuals.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened wildlife. These prohibitions, at 50 CFR 17.21 and 17.31, in part, make it illegal for any person subject to the jurisdiction of the United States to “take” (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt any of these) within the United States or upon the high seas; import or export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 for endangered species and 17.32 for threatened species. With regard to endangered wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities. For threatened species, a permit may be issued for the same activities, as well as zoological exhibition, education, and special purposes consistent with the Act.

Special Rule

Section 4(d) of the Act states that the Secretary of the Interior (Secretary) may, by regulation, extend to threatened species prohibitions provided for endangered species under section 9 of the Act. Our implementing regulations for threatened wildlife (50 CFR 17.31) incorporate the section 9 prohibitions for endangered wildlife, except when a special rule is promulgated. For threatened species, section 4(d) of the Act gives the Secretary discretion to specify the prohibitions and any exceptions to those prohibitions that are appropriate for the species, and provisions that are necessary and advisable to provide for the conservation of the species. A special rule allows us to include provisions that are tailored to the specific conservation needs of the threatened species and which may be more or less restrictive than the general provisions at 50 CFR 17.31.

Under the special rule, all prohibitions and provisions of 50 CFR 17.31 and 17.32 apply to the yellow-billed parrot, except that import into and export from the United States of certain yellow-billed parrots, and certain acts in interstate commerce of yellow-billed parrots, will be allowed without a permit under the Act, as explained below.

Import and Export

The special rule applies to all commercial and noncommercial international shipments of live and dead yellow-billed parrots and parts and products, including the import and export of personal pets and research samples. In most instances, the special rule adopts the existing conservation regulatory requirements of CITES and the WBCA as the appropriate regulatory provisions for the import and export of certain yellow-billed parrots. The import into and export from the United States of birds taken from the wild after the date this species is listed under the

Act (see **DATES** section, above); conducting an activity that could take or incidentally take yellow-billed parrots; and foreign commerce will need to meet the requirements of 50 CFR 17.31 and 17.32, including obtaining a permit under the Act. However, the special rule allows a person to import or export either: (1) A specimen held in captivity prior to the date this species is listed under the Act (see **DATES** section, above), or (2) a captive-bred specimen, without a permit issued under the Act, provided the export is authorized under CITES and the import is authorized under CITES and the WBCA. If a specimen was taken from the wild and held in captivity prior to the date this species is listed under the Act (see **DATES** section, above), the importer or exporter will need to provide documentation to support that status, such as a copy of the original CITES permit indicating when the bird was removed from the wild or a museum specimen report. For captive-bred birds, the importer will need to provide either a valid CITES export/reexport document issued by a foreign Management Authority that indicates that the specimen was captive-bred by using a source code on the face of the permit of either “C,” “D,” or “F.” For exporters of captive-bred birds, a signed and dated statement from the breeder of the bird, along with documentation on the source of their breeding stock, will document the captive-bred status of U.S. birds.

The special rule applies to birds captive-bred in the United States and abroad. The terms “captive-bred” and “captivity” used in the special rule are defined in the regulations at 50 CFR 17.3 and refer to wildlife produced in a controlled environment that is intensively manipulated by man from parents that mated or otherwise transferred gametes in captivity. Although the special rule requires a permit under the Act to “take” (including harm and harass) a yellow-billed parrot, “take” does not include generally accepted animal husbandry practices, breeding

procedures, or provisions of veterinary care for confining, tranquilizing, or anesthetizing, when such practices, procedures, or provisions are not likely to result in injury to the wildlife when applied to captive wildlife.

We assessed the conservation needs of the yellow-billed parrot in light of the broad protections provided to the species under CITES and the WBCA. The yellow-billed parrot is listed in Appendix II under CITES, a treaty which contributes to the conservation of the species by monitoring international trade and ensuring that trade in Appendix II species is not detrimental to the survival of the species (see *Conservation Status*, above). The purpose of the WBCA is to promote the conservation of exotic birds and to ensure that imports of exotic birds into the United States do not harm them (see Factor D discussion, above). Data indicate that illegal international trade in Jamaican wildlife is on the rise; however, the requirements of CITES, WBCA, and the special rule will minimize illegal trade of yellow-billed parrots with the United States. Additionally, the best available commercial data indicate that poaching of the yellow-billed parrot stems mainly from illegal trade in the domestic markets of Jamaica. Thus, the general prohibitions on import and export contained in 50 CFR 17.31, which only extend within the jurisdiction of the United States, will not regulate such activities. Accordingly, we find that the import and export requirements of the special rule provide the necessary and advisable conservation measures that are needed for this species.

Interstate Commerce

Under the special rule, a person may deliver, receive, carry, transport, or ship a yellow-billed parrot in interstate commerce in the course of a commercial activity, or sell or offer to sell

in interstate commerce a yellow-billed parrot without a permit under the Act. At the same time, the prohibitions on take under 50 CFR 17.31 apply under this special rule, and any interstate commerce activities that could incidentally take yellow-billed parrots or otherwise prohibited acts in foreign commerce require a permit under 50 CFR 17.32.

Although we do not have current data, we believe there are few yellow-billed parrots in the United States. Current International Species Information System (ISIS) information shows no yellow-billed parrots held in U.S. zoos (ISIS 2011, p. 1). However, some zoos do not enter data into the ISIS database. Persons in the United States have imported and exported captive-bred yellow-billed parrots for commercial purposes and one body for scientific purposes, but trade has been very limited (UNEP–WCMC 2011, unpaginated). We have no information to suggest that interstate commerce activities are associated with threats to the yellow-billed parrot or will negatively affect any efforts aimed at the recovery of wild populations of the species. Therefore, because acts in interstate commerce within the United States have not been found to threaten the yellow-billed parrot, the species is otherwise protected in the course of interstate commercial activities under the incidental take provisions and foreign commerce provisions contained in 50 CFR 17.31, and international trade of this species is regulated under CITES, we find this special rule contains all the prohibitions and authorizations necessary and advisable for the conservation of the yellow-billed parrot.

Correction to the Salmon-crested Cockatoo Special Rule

On May 26, 2011, we published in the **Federal Register** (76 FR 30758) a final rule listing the salmon-crested cockatoo as threatened with a special rule under section 4(d) of the Act. In the preamble of that 4(d) rule, we explained that we were adopting a provision similar to the one we are adopting in this 4(d) rule for the yellow-billed parrot, which would allow certain acts in interstate commerce for salmon-crested cockatoos without a permit under 50 CFR 17.32. However, consistent with our intent in adopting the exceptions contained in the 4(d) rule for the salmon-crested cockatoo, we are correcting the regulations found at 50 CFR 17.41(c) for the salmon-crested cockatoo to clarify the specific acts in interstate commerce that may be conducted without a threatened species permit under 50 CFR 17.32.

Required Determinations

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that we do not need to prepare an environmental assessment, as defined under the authority of the National Environmental Policy Act of 1969, in connection with regulations adopted under section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A list of all references cited in this document is available at *<http://www.regulations.gov>*, Docket No. FWS–R9–ES–2011–0075, or upon request from the U.S. Fish and Wildlife Service, Endangered Species Program, Branch of Foreign Species (see **FOR FURTHER INFORMATION CONTACT** section).

Author

The primary authors of this notice are staff members of the Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) by adding an entry for “Parrot, yellow-billed” in alphabetical order under BIRDS to the List of Endangered and Threatened Wildlife to read as follows:

§17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic Range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
BIRDS							
*	*	*	*	*	*	*	
Parrot, yellow-billed	<i>Amazona collaria</i>	Jamaica	Entire	T	804	NA	17.41(c)
*	*	*	*	*	*	*	

* * * * *

3. Amend § 17.41 by revising paragraph (c) to read as follows:

§ 17.41 Special rules—birds.

* * * * *

(c) The following species in the parrot family: Salmon-crested cockatoo (*Cacatua moluccensis*) and yellow-billed parrot (*Amazona collaria*).

(1) Except as noted in paragraphs (c)(2) and (3) of this section, all prohibitions and provisions of §§ 17.31 and 17.32 of this part apply to these species.

(2) *Import and export.* You may import or export a specimen without a permit issued under § 17.32 of this part only when the provisions of parts 13, 14, 15, and 23 of this chapter have been met and you meet the following requirements:

(i) *Captive-bred specimens:* The source code on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) document accompanying the specimen must be “F” (captive born), “C” (bred in captivity), or “D” (bred in captivity for commercial purposes) (see 50 CFR 23.24); or

(ii) *Specimens held in captivity prior to certain dates:* You must provide documentation to demonstrate that the specimen was held in captivity prior to the applicable date specified in paragraph (c)(2)(ii)(A) or (B) of this section. Such documentation may include copies of receipts, accession or veterinary records, CITES documents, or wildlife declaration forms, which must be dated prior to the specified dates.

(A) *For salmon-crested cockatoos*: January 18, 1990 (the date this species was transferred to CITES Appendix I).

(B) *For yellow-billed parrots*: [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the date this species was listed under the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*)).

(3) *Interstate commerce*. Except where use after import is restricted under § 23.55 of this chapter, you may deliver, receive, carry, transport, or ship in interstate commerce and in the course of a commercial activity, or sell or offer to sell, in interstate commerce the species listed in this paragraph (c) without a permit under the Act.

* * * * *

Dated: February 14, 2013

Rowan W. Gould

Deputy Director, U.S. Fish and Wildlife Service

Billing Code 4310-55-P

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